

# THE ZOOLOGIST

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## THE "SEA-ELEPHANT" (*MACRORHINUS ELEPHANTINUS*).

(PLATE III.)

SOME few months ago Mr. Robert Service, of Dumfries, kindly forwarded to us a photograph of a specimen of this animal which had been killed on the Falkland Islands. This photograph, however, was too faint for reproduction, and, at our request, he asked his correspondent, Mr. Wm. Grierson, of Stanley, F. I., to send us, if possible, a better impression. This has now been received, and is reproduced in the accompanying Plate. With the photograph, Mr. Service received the following letter from the capturer of this interesting beast:—

"STANLEY, F. I., June 21st, 1899.

"DEAR SIR,—Mr. Grierson gave me your letter of April 20th, enquiring about the 'Sea-Elephant.' I beg for your information to say that the animal is now very scarce, this being, I believe, the only grown one killed on these islands for the past twenty-five years. One was seen on the north coast about a year ago, but I have not heard of it since I killed the one, of which you saw the photograph, about this time last year, while I was killing a few Sea-Lions on a small island about fourteen miles to the southward of Stanley. I killed two Seals about 7 ft. long, and not until I saw the grown Elephant could I find out what they were. I then saw that they had been young Elephants.

"It was on February 6th last that the large one in question was found hauled up to high-water mark on the south shore of Stanley Harbour, and about one hundred yards to the east of the Settlements.

He made no attempt to leave the beach until he had been disturbed several times by my tapping him on the trunk. At first he only opened his mouth to the full extent; latterly he raised himself on his fore flippers and swung his after-part round, thus turning his head towards the water; after this, by placing his fore flippers a little forward and drawing his body forward, somewhat like a snail, he was making for the water. A rope was then passed over his head, and fastened to a rock to prevent his getting away. On being lanced behind the fore flipper the blood ran freely, but the animal pressed his flipper several times on the wound and stopped the bleeding, until the flipper was forced from his side; at a low estimate there was three hundred gallons of blood. The length from the tip of the trunk to the end of the hinder flippers was 17 ft. 18 in.; the skin, when spread, measured 18 ft. by 12 ft. He was in low condition as regards blubber, there only being forty gallons. The hide resembles that of the Land-Elephant in colour, and is covered with deep scars from the head to one-half of his length. The skin and skeleton are still here. I think to give the Smithsonian Institute the first refusal, as Mr. Grierson is sending photographs. I will send one of the skeletons, minus the head, which has not been taken.—(Signed) JAS. SMITH."

This appears to refer to some lantern-slides of a specimen which were exhibited, on behalf of Mr. Rupert Vallentin, at a meeting of the Linnean Society on June 1st last. According to the official report of that meeting,—“The distribution of this huge Seal on various antarctic and subtropical islands having been traced, Mr. Vallentin’s notes on a specimen killed in Stanley Harbour were read. It measured 18 ft. 11 in. from the end of the trunk to a straight line between the two hinder extremities; the trunk, produced by the inflation of a loose tubular sac of skin above the nostrils, is present only in the male, and measures, when fully extended, 12 in. from the gape. No fresh facts were made known concerning the nature of the food of this animal: described by some writers as herbivorous, like the Manatee; by others, as feeding on Mollusca and Crustacea, like the Walrus. In this case the stomach was empty, with the exception of a large number of Nematode worms, specimens of which were exhibited.”

In the late Prof. Moseley’s “Notes by a Naturalist on the ‘Challenger’” will be found considerable information regarding this animal. It has almost entirely deserted the island of Tristan da Cunha. Four specimens were found on landing at Kerguelen’s Land, where the species is probably common. On Heard Island there were strewn thousands of skeletons of the “Sea-Elephant.” “The bones lay in curved lines, looking like tide lines, on either



side of the plain above the beaches, marking the rookeries of old times and tracks of slaughter of the sealers." Specimens which were preserved on board the 'Challenger' were found to have "only a greenish slime in their stomachs"; and Moseley states that "neither the *Otaria adæ* nor the 'Sea-Elephants' feed during the breeding season, but live upon their fat, becoming gradually thinner and thinner." They seem very plentiful on Heard Island, where on one beach thousands can be seen in the breeding season. The Californian "Sea-Elephant" (*Macrorhinus angustirostris*) is well described in Allen's 'North American Pinnipeds,' and is there stated to "differ very little in size, colour, or other external features" from the southern species. Capt. Scammon has described the animal and its habits most fully; and is by Allen freely quoted.

Under the name of *Macrorhinus leoninus*,\* Trimen reports it as having been met with on the Cape Coast (cf. Noble's 'Official Handbook of the Cape and South Africa,' pp. 60-1). The Rev. A. E. Eaton, during his visit to Kerguelen Island, frequently saw young Sea-Elephants in Swains Bay. "Some examples are uniformly reddish brown, others are pale, blotched and spotted with darker grey. They usually lie just above the beach, separately, in hollows among the *Acæna* and *Azorella* where they are sheltered from the wind." (Proc. Roy. Soc. xxiii. 1875, p. 502.) According to the information obtained by Robert Hamilton, "They take particular delight in covering themselves with great quantities of sand, moistened by the sea-water, which they throw over them with their paws till they are entirely enveloped in it. It is under these circumstances especially, that with Forster, we might mistake them for so many enormous rocks." ('Amphibious Carnivora,' &c., p. 219.)—(Ed.).

\* The late Sir W. H. Flower advocated the use of this name. He wrote:—"There is much confusion as to the synonymy of the species. It is the *Phoca leonina* of the 'Systema Naturæ,' ed. xii., founded upon the 'sea lion and lioness' of Juan Fernandez, described and figured in Anson's Voyage, 1748; the *P. elephantina* of Molina, 1782, and the *P. proboscidea* of Perron, 1815, and of many late authors. *Leonina* therefore is the earliest specific appellation" ('Philosoph. Trans.' clxviii. 1879, p. 96).

AN OBSERVATIONAL DIARY OF THE HABITS  
OF NIGHTJARS (*CAPRIMULGUS EUROPÆUS*),  
MOSTLY OF A SITTING PAIR. NOTES TAKEN  
AT TIME AND ON SPOT.

BY EDMUND SELOUS.

*June 22nd, 1898.*—Crawled up behind a small elder bush some three paces from where a Nightjar had laid her eggs. When nearly there the bird flew down, not on to nest, but close to it. Shortly afterwards the other bird flew down beside it, and immediately I heard a very low and subdued "churr," expressive of quiet contentment, I think, and very different from the ordinary loud note of the bird. After I had got up under cover of the bush the following occurred:—One of the birds came on to the eggs, and began to "churr" softly. The other bird then flew down and sat close beside it, also churring (I think, but cannot be certain if both churred together). The bird last arrived then flew away, leaving the other on the eggs. This one, after ten minutes or so, also flew away, uttering the "quaw-ee" note. In a little while one of the birds returned, and settled near the eggs. Its mate very shortly joined it; and I now heard another note, a low croon, quite distinct from the "churr" uttered by one or both of them. One bird then flew away, and the other came and sat on the eggs, and began to "churr" softly at first, then loudly, the ordinary churring note. In some ten or fifteen minutes' time it flew off. In a little while one of the birds returned, and was followed almost at once by the other. Both flew down near the eggs, and soon one settled itself on to them, the other flying away. I had now got my watch out, and this bird sat for fifty-five minutes silently (no "churr," no sound at all), at the end of which time its partner flew near by clapping its wings, and then sat on a bush close behind me (as I judged, for I could not turn), and "quaw-ee-d."\* Upon this, as in answer to a summons, the

\* As it flew off no doubt, for this note "quaw-ee quaw-ee" is, according to my observation, only made in the air.



sitting bird left the eggs, uttering the same note, and both flew away together. They were away for nearly twenty minutes, when one of them returned (this time flying right down on to the eggs in silence), and continued to sit silently for an hour or the best part of an hour (it being now too dark to see the time), during all which time I was digging out the sand behind the bush so as to have a better place to sit and watch in. I then went out and brought some branches to make more cover, but in placing these I startled the bird away. Having made a good shelter I left. I imagine that the bird which sat twice for a short time only and churred on the eggs whilst alone was the male, whilst the silent and long-sitting bird was the female.

*June 23rd.*—Found bird sitting at 3.15 p.m. The Nightjar seems almost as good an example of protective colouring as any insect. It harmonizes to absolute perfection with the sandy ground, dry sticks, and pieces of fir-tree bark, amongst which it so often lays its eggs. My shelter was at some three paces of the bird as it sat, and I could distinctly see the outline of the latter part of its body, and one wing with the tail. Yet, scrutinizing it with the utmost attention for ten minutes or a quarter of an hour at a time, it was only at twenty minutes past four that I finally became convinced it was the bird and not a piece of fir-bark at which I was looking; and this though I knew the eggs to be there, yet could not see them. Stayed till five, during all which time the bird sat in silence.

Returned at 6.10 p.m., and found bird (presumably the same one)\* still sitting in the same position.

6.25.—A bird in clump of fir-trees near churred slightly.

8.15.—First flying note of the Nightjar heard as well as the "churr."

8.40.—Sitting bird relieved by her mate. He settled down facing her, and then, as it were, snuzzled up to her, churring softly. Whilst doing so he wagged his tail from side to side, as did the other one also in exactly the same way. I believe therefore that both birds churred together, though I could not be quite certain that I heard the two separate notes. The bird I had been watching then flew away with a "quaw-ee," the other one

\* One bird—no doubt the hen—sits on the eggs all day, and does by far the greater part of the night-sitting also.

having insinuated itself into her place on the eggs, but with the head turned the other way (to where the tail of the other bird had been). In a minute or two only the first bird returned, when both immediately flew away together (at 8.40) quaw-eeing. I could then see the eggs plainly. They had not till then been uncovered, one bird having, as it were, squeezed itself on and the other off them. (My tame Doves used to act in the same way, the one snoozling itself up to the other, and thus taking its place.)

8.55.—One bird certainly (I think two) flew near, clapping their wings loudly and repeatedly. I took them to be the pair.

8.55.—Two birds (probably the pair) flying about near, clapping their wings and quaw-eeing.

9 (nearly).—Bird flew down direct on to eggs and sat on them (in the accustomed position) for a second on two only, then again flew off quaw-eeing.

9.5.—A bird settled down somewhere not very far from the eggs, and kept churring. Another bird flew by quaw-eeing.

9.25.—A bird flew silently down near the eggs, then rose, hovered a few seconds over the tops of the nettles, thistles, &c., and again went down near them. It then again rose, and hovered over the eggs with its wings aloft over its back (characteristic), and once more flew down a little way off. Finally, at 9.27 or 9.28, it rose and came down on to the eggs with a clattering noise, made no doubt with the wings. It took some time to settle itself comfortably on to the eggs (which it did in the accustomed position), and then sat silently, not churring.

9.35.—A bird (the mate, I make no doubt) flew quite near (settled once, I think), clapping its wings and "quaw-eeing." From the sound I thought it clapped its wings whilst settled on the ground, as well as whilst flying, but cannot be sure either of this or that it did settle. During this time, and till 9.45, when I went away, the sitting bird was quite silent.

*June 24th.*—At 8.10 p.m. found bird sitting, but in a different position, the head being turned the other way. It was a wet night, and came on to rain a little worse as I arrived. At 8.25 an Owl flew by (flying fast and high) in exactly the same direction, and about the same time (for I had not looked at my watch) as the night before.

8.28.—Churring commences.

8.33.—A Nightjar flew by, uttering a single note like "queek queek," not the more usual "quaw-ee."

8.42.—Sitting bird relieved. The arriving bird hovered for some time above its mate, waving its wings rapidly, but uttering no sound. Whilst it was acting thus the sitting bird churred quietly and contentedly, wagging its tail from side to side as before. The whole body waggles as well as the tail, but the tail is the most noticeable. In a second or two the hovering bird settled on the ground beside the other, which then flew off quaw-eeing. Its partner continued to sit where it was—not on the eggs, but close by them—for two or three seconds, when it also flew off.

8.49.—Two birds (probably the pair) flew by pursuing each other, one of them clapping its wings loudly and repeatedly.

The birds being now gone, I went round the bush, and picked some of the nettles and grasses from about the eggs so as to have a better view of them from my shelter; then went back.

8.55.—Two birds flew near quaw-eeing and clapping their wings, and one settled not very far off—in a small fir tree, I think—and churred. After a little it rose, clapping its wings. At this time some other Nightjar, after churring, uttered a note like "chu-oo chu-oo chu-oo," quite different from the usual "quaw-ee" as the bird takes flight. Whether this note is uttered whilst the bird is still sitting, or only as it flies off, I do not yet know.\*

No bird returned to the eggs for over an hour, and I grew more and more uneasy. At last, at 10 o'clock, one returned, and hovered for some time above them. Instead of settling on them, however, it made a dart off to one side, and came down on the ground a little way off. Shortly afterwards it flew away. At 10.30 the eggs were still uncovered, though one of the birds had again hovered in the neighbourhood, though not very near them. I now went away. The eggs had therefore been uncovered from 8.42 to 10.30 as a minimum.

*June 25th* (10.15 a.m.).—Found bird sitting in the accustomed position (head towards me, that is, and tail overlapping dried stalk). Could see it even better than before, owing to having

\* Only as it flies off, I believe.

removed what thin and scattered herbage had become interposed. It sat quite motionless, the large eye shut, but occasionally opening to a very limited extent so as to show a long black slit.

10.30.—The low sleepy "churr" of a Nightjar from neighbouring fir-clump. Left a little after 10.30.

At about 11 a.m. crept up behind a bush, near which sat another Nightjar with young birds (I had disturbed this family three or four days before, when the old bird spun along the ground as if hurt), From here I could see the bird sitting just as the other one did on her eggs with a young one on each side of her. This I did not remark till one of the young birds moved and then shuffled itself more under its mother's breast, causing her to sit with the head held higher. I then saw both this and the other young one for the first time. Just then (11.25) the old bird either saw me or suspected my presence, and went off the nest, spinning over the ground in various directions. She then flew to a small bush near by, and sat there, uttering a note like "chook chook chook." Shortly after she flew off and out of sight.

11.30.—Bird returned to a bush close to the one she had left, and again uttered the note "chook chook"; then sat silent.

11.55.—Bird left the bush and flew around evidently disquieted. At 12 I came out, but before leaving walked to where the young birds had been, and where I had seen them after the mother had flown away. To my surprise they were gone, and, though I looked carefully all about, I could not find them anywhere. The "chook chook chook" therefore of the mother may have been the danger signal.

12.30.—Came back to the first bird, and found it (assuming it was the same) still sitting, but in a changed position, the head being now turned the other way. This time I was entirely deceived by the bird's resemblance to an inanimate object (though the bird I had just left had not deceived me). Not catching the outline of the tip of the wings and tail across the dry stalk (to which I had become accustomed) my eye rested full upon it, and I thought I was looking at a piece of fir-bark, one of those amongst which it sat. I, in fact, looked for the eggs upon the bird, for I knew the exact spot where they should be. But as I should have seen them at once, owing to their light



colour, I felt sure that they must be covered, and, gazing still more attentively, all at once, by an optical delusion as it seemed, rather than by the passing away of one, the piece of fir-bark became the bird. The broad flat head, from which the short beak hardly projects noticeably, presents no special outline for the eye to seize on, but is all in one line with the body. It looks just like the blunt rounded end of a stump or piece of fir-bark, whilst the dark brown lines and mottlings of the feathers not only blend with and fade into the surroundings, but have in themselves, at a little distance, a great resemblance to the flaked surface of the bark, the lighter feathers exactly mimicking those patches where some of the layers have been more newly flaked off. This would only be of special advantage to the bird when, as in the present instance, it had laid its eggs amidst pieces of fir-bark, and, did it invariably do so, a special protective resemblance might perhaps be admitted. This, however, is not the case. It lays them also under beeches or elsewhere where no fir-bark is to be found. Unless therefore it could be shown that a large majority of Nightjars lay their eggs in the neighbourhood of fir-trees, the theory of a special resemblance due to the action of natural selection must be given up, as I believe it ought to be in other apparent instances. No doubt when the objects adjacent are different the sitting bird may often appear to have a special resemblance to one or other of them; but as, owing to its habits, such objects would be mostly of the same general description, the bird's colouring may have been made generally protective in relation to its incubatory habits. The Nightjar lays on the ground, and one of the birds sits on the eggs without leaving them the entire day. Day, however, is night to the Nightjar, which not only sits on its eggs, but sleeps, or at least dozes, on them as well. It is therefore much exposed during this period, and would be liable to be taken unawares without some protection, and such protection it has by virtue of its plumage and its habit of sitting very close. Drowsiness may in this case have meant security both to bird and eggs, for the most sleepy birds would, by keeping still, least endanger their young at all stages.

The two birds that I am watching have laid their eggs in the midst of pieces of fir-bark of various sizes lying on a sandy soil.

from which spring nettles, thistles, &c., with alder bushes scattered about singly or in clumps.

Left at 1.30, the bird not having moved perceptibly.\* During most of the time the eyes were closed.

*June 25th.*—Found bird sitting at 8.15 p.m. Position a little varied from the usual one. The eye shut, the bird seeming to be asleep or dozing.

8.21.—A bird churred sleepily, but soon ceased.

8.30.—The first prolonged churring. I shall refer† to the occasional modification of the “churr” when it becomes less instrumental, and more voice, as it were, enters into it (for the ordinary “churr” sounds more instrumental than vocal). I shall also allude to the “chu-oo chu-oo chu-oo” uttered just after the “churr.” But besides these the “churr” (as heard by me at this moment) sometimes ends in a sort of jubilee of gurgly notes impossible to describe.

8.35.—First bird seen flying slowly and clapping its wings in a very leisurely manner. Upon the sound of a gun fired near the noisy “churr” sinks into a low bubbling note.

8.37.—The Owl flies high in the air in same direction as night before.

8.49.—Sitting bird relieved. Her mate came, I think, from neighbouring plantation, uttering the “quaw-ee” note, which she acknowledged with a soft churring. The newly-come bird then seated itself beside the other in exactly the same attitude (like a Swift on the ground) at a distance of about six inches, and both birds churred together,‡ wagging (it is the best word) their whole bodies, as well as their tails, from side to side, especially the one on the eggs. In a second or so this latter rose from the eggs, and flew away to the plantation from which the other had come. This one did not move on to the eggs, but continued to

\* Except blinking the eyes.

† In concluding “General Observations.”

‡ “This churring note . . . is said to be confined to the male bird, and only uttered when it is perched” (*cf.* Seebohm, ‘History of British Birds’). “The well-known vibrating ‘churr’ is believed to be uttered by the male only” (*cf.* Howard Saunders, ‘Illustrated Manual of British Birds’). “As the season advances the song of the cock,” &c. (*cf.* Prof. Newton in ‘Ency. Brit.’ (last edition), and also in ‘Dictionary of Birds’).

sit where it was, and in a few seconds (before I had finished making the note) flew off after the other.

A little before nine a bird passed near quaw-eeing. Another flew by a little after, also quaw-eeing, and clapping its wings in a rather peculiar manner. No doubt they were the pair. At a few minutes past nine one of the birds came back, hovered a little over the eggs, then darted to one side, and settled on the ground a little way from them. Soon it walked up to them (or rather waddled,\* the legs being quite invisible); and now I witnessed a curious action. I must say that just previously, when both birds were away, I had left my shelter in order to pick another nettle or two, and thus give myself a still clearer view, and I had then noticed that the two eggs were rather wide apart. As the bird now got on to them (which it did by pushing itself along the ground), it must, I think, have moved them still farther from each other. At any rate, it became necessary, in the bird's opinion, to alter their position, and in order to do this it went into a very peculiar attitude. It, as it were, stood up on its breast, with its tail raised almost perpendicularly in the air, so that it looked somewhat like a peg-top placed peg upwards on the broad end, the legs being at no time visible. Thus poised, the bird pressed with the under part of its broad beak, or, as one may say, with its chin, first one egg and then the other against and under its breast,† and, so holding it, moved backwards and forwards over the ground, presenting a strange and unbird-like appearance. The ground, however, was not even, and, despite the bird's efforts to get the eggs together, one of them (as I saw) rolled down a little declivity. At the bottom some good-sized pieces of fir-bark lay partly buried in the sand, and under one of these the egg became wedged. The bird was unable to get it out so as to bring it up the hill again to where the other egg lay, for the bark, by presenting an edge, prevented it from getting its chin against the further side of the wedged egg so as

\* This word, though I could think of no better one at the time, does not properly express the bird's motion. As will appear later on, the Nightjar is quite at home on the ground.

† In such a position the bristles fringing the gape would help to keep the egg secure, whilst the toothed claw would help the bird to get a grip on the ground in its strained attitude; but I do not estimate this as any special adaptation in relation to these odd and probably infrequent proceedings.

to press it against its breast as before, though making the most desperate efforts to do so. Wedging its head between the bark and the ground, the bird now stood still more perpendicularly upright on its breast (or rather, in this case, on its head) than it had done before, and in this position shoved and shouldered away most desperately. After each effort it would lie a little, as if exhausted, then waddle to the other egg, and settle itself upon it; but in a minute or two it would return to the one it had seemingly abandoned, and repeat its efforts to extricate it. I must have watched the bird make at least half a dozen of these attempts; but at last, after nearly half an hour, an idea occurred to it (or rather it altered its tactics then, as the idea may have come sooner). Again going to the properly placed egg, the bird, instead of covering it as before, began to move it to the other one in the way that I have described. "If the mountain will not go to Mohammed, Mohammed must go to the mountain." That was clearly the process of reasoning, and, seeing how set the bird's mind had been on one course of action, how it had toiled and struggled and returned to its efforts again and again, its sudden adoption of another plan shows, I think, both intelligence and versatility. It, in fact, acted just as an intelligent man would have acted. It tried to do the best thing till convinced it was impossible, and then did the second best. Still, we cannot any more, than in the case of the man, assume that the alternative course of action was not in the bird's mind from the beginning. Having got the two eggs together again, the bird appeared to me (for it was now too dark to observe accurately) to be trying to push the piece of bark away backwards with its wings, feet, and tail. It certainly propelled itself backwards against the edge, after the manner—observed by Jenner, and now, I believe, authenticated by photography—the young Cuckoo ejects its foster brothers and sisters from the nest. Finally, at 9.40, it flew away. I then went out to look, and saw that the bird had been successful in its efforts to a certain extent. The two eggs lay together, and though not quite on the same level, and though the piece of bark was still in the way of one of them, it might still, though not with ease, have sat on them both. However, had I left them as they were, I have no doubt that the birds would have worked away till matters were quite



satisfactory. But having watched what had been taking place for a full half-hour at only three paces distance, and as, on the bird's return, it would have been too dark to see anything more, I thought I would assist them, and so smoothed down the declivity, and laid the eggs side by side on a flat surface. I must add that while the bird was thus struggling to extricate its egg it uttered from time to time a low querulous note.

At about ten one of the birds settled on a bush just in front of me, and sat there silently for some ten minutes, then flew and settled on the ground near eggs for a minute or two, and whilst there uttered a low guttural note. Finally, at 10.13, it came and settled itself quietly on to the eggs as I had placed them. This and my subsequent observations make me think that it was not the bird that had got into difficulties, but the other and more skilful one—the hen, no doubt—the cock bird being less perfect in the art of incubating.

*June 26th.*—Reached bush at 8.22 p.m., and found the bird sitting in the same position as night before. It seemed to be asleep, the eye being fast shut. The eggs appeared to have been moved slightly to one side, judging by where the bird sat.

8.34.—Sitting bird relieved. Process exactly the same as on night before. The relieving bird came from neighbouring plantation quaw-eeing, and when near was answered by a gentle "churr" from the brooding bird. This latter's head was turned the other way, so that she could not have seen her mate as he flew up. Moreover, she opened her eyes for the first time at his "quaw-ee." The new-come bird settled himself beside the brooding one as on previous night (same distance apart), and both of them churred, gently wagging their bodies from side to side. Then in a few seconds the relieved bird flew away (I think silently), and was followed a few seconds afterwards by the other one, which had not moved on to the eggs, or from where it had alighted. Upon going round the bush and looking at the eggs, I could not feel certain that they had been moved from where I placed them the previous night. The distance, I find, from where I sit to the eggs is just three paces.

8.53.—Bird flew near, and would have perched on the same little bush (just in front of me) as last night, but it saw me, I think, and, very little startled, settled on ground close by.

Soon it flew up again, and came right down on to the eggs, settling itself in a different position to that at 8.22, the head being turned the other way. The eye, as far as I could see in the waning light, was again shut.

9.3.—The other bird flew up quaw-eeing as before, and, when near, the sitting one churred softly. He settled beside her silently whilst she continued to "churr," lifting up her tail and wagging it from side to side. I had not noticed the tail lifted so high before; it was raised considerably from the ground. In a few seconds the sitting bird flew off, and the other at once moved on to the eggs, but did not get on them properly, and began to pull them about with its beak (always the under part or chin), though not going into the curious attitude of the night before. The bird did not seem able to manage the eggs, and, after sitting hardly a minute on one only, flew off again, leaving them a couple of inches apart instead of side by side, as they had been left by the other.

9.22.—Bird settled on ground in neighbourhood of eggs, churred a little, and then flew away.

9.33.—Bird settled on ground near eggs, and in a second or two flew on to them, and got them together again, I think by stretching out a wing to one of them, and pulling it up to itself, but too dark now to see properly. At any rate, there was no clumsiness or uncouth attitude this time. This bird seemed master of the art of sitting; believe it to be the hen, and that it was the other (the cock bird) that got into difficulties with the eggs last night, and again this, though not to the same extent. If this be so, then the cock Nightjar is only a "'prentice han" at incubation. Had to leave now.

*Note.*—This same night (at 9.15) had several fine opportunities of watching pairs of birds chasing and playing about with each other high in the air (a beautiful sight), both of them clapping the wings above the back as an essential part of the performance. The clapping of the wings is as characteristic of this bird, as is the churring itself, and as much an expression of feeling between the male and female during the breeding season.\*

\* At least in relation with the bird's nuptial activities. Compare aerial antics of Peewits in the spring. This most salient peculiarity of the Nightjar appears to have been most inadequately noticed. I have not met with an interesting remark in regard to it.

(I shall subsequently allude to this point under "General Observations.")

*June 27th.*—(Bad weather all day; rainy and cloudy evening.)

Arrived at 8.15. Heard birds churring already. Bird sitting. Head turned towards stalk, eyes closed, and seemingly asleep. When sitting the tips of the wings cross each other over the tail, which projects an inch or so beyond them.

8.50.—At the loud bang of a gun not far off ("making night hideous") the bird just opened its eyes (the one next to me at least) to the smallest possible extent, hardly noticeable at all, and then shut them again. They had been closed until then, but for one little blink.

8.40.—The eyes still fast closed. A bird flew by quite near quaw-eeing, but the sitting bird took no notice. Again the bird (or another one) flew by, still closer, calling as before—no notice. But a little farther on he was answered by a soft "churr" from the ground, his mate, as I concluded, sitting on the eggs. He did not settle, but circled round several times, quaw-eeing and clapping his wings, the other bird answering with "churrs," and also a soft croodling note, very expressive of satisfaction. Note that my sitting bird paid no attention to the greeting of a bird, not her mate, which greeting was not addressed to her, though uttered quite close—in fact, just over her head.

8.55.—A bird flew near by quaw-eeing, and the sitting one answered with a very subdued and low "churr" (the lowest I have yet heard). The bird flew on without settling. The sitting bird had not opened its eyes properly till then. I seemed to recognize the note made by the flying bird, but wondered at the "churr" being so low and so quickly ended.

*Query.*—Was it a mistake on the sitting bird's part? It sounded like, "Was that——? No. I thought I recognized his voice."

Five or six birds now flew near about, seeming to chase and sport with each other. Some flew quite close, but to their cries the sitting bird made no response.

9.10.—Partner still not come. Sitting bird now became wakeful, moving her head round first one way and then another; then flew off so suddenly that I thought she must have caught

sight of me through the screen. In all probability, however, this was not the case.

Walked about a little, and returned to screen at 9.30.

About 9.40 a bird came and sat on the same alder-stump as night before (some four feet high, and only a few feet from where I sat, with very little cover between—last night hardly any). It sat there about ten minutes, uttering during a good part of the time a low guttural note, perhaps something like "ho-oo ho-oo ho-oo," but impossible to write it. No doubt whatever as to this; heard it as plainly at that distance as if the bird had churred. At 9.50 bird flew from its stump round my bush and on to its eggs, which suddenly disappeared, but it was too dark to see the bird on them.

*June 28th.*—Arrived at 11.20 a.m., and found bird sitting, the head this time turned straight towards me, which had not been the case before. Evidently dozing. One eye, however, was a little more open than the other, showing just a black slit. A Blow-fly was walking over its head and beak, and the bird took no notice. Flies afterwards settled on it from time to time, and walked about over it. When they went over its eyes the bird blinked the one or the other of them, or just twitched without opening it. A large green fly flew right at one of her eyes, when, without opening it, she gave her head a jerk.

Three times, whilst sitting here, I observed the feathers just under the bird's throat to be quivering, whilst the beak was very slightly (as slightly as possible) open. I satisfied myself that this motion of the feathers was produced by the bird itself, and not by the wind, for it was only occasional, whereas the wind was continuous. They were often still during a sudden gust of wind, and, moreover, why should the wind have moved just those feathers and no others? I could hear no sound, though I believe there was one. The bird perhaps was dreaming and churring in its dreams.

Left at 1.10 p.m.

7.25 p.m.—(No rain during day and sunny, but now cloudy and almost raining.) Bird sitting in nearly same position as in the morning. Eyes shut.

8.25.—Sitting bird relieved. Its partner flew up quaw-eeing, and when near was answered with a slight "churr." It settled



down a few inches off, and then both birds churred, wagging their tails from side to side in the usual manner. In a second or two the sitting bird flew off, silently at first, but when she had gone a little way gave a "quaw-ee." The other one sat where he was for a second or so (not going on to the eggs), and then flew after her.

9.28.—Bird began to "churr" on eggs,\* and did so at short intervals in little bursts for a few minutes, as if it heard the voice of its mate, which I believe it did, though I could not.

9.50.—Other bird settled on elder-stump near, and kept uttering a peculiar single note like "quo quo," which was answered (but only occasionally) by a "churr" from the sitting bird.

9.53.—The bird on the stump flew near to the one sitting, which rose and joined it, and then both flew off quaw-eeing.

9.55.—Bird flew on to stump, and kept uttering low single note. In less than a minute it flew to eggs and sat on them. Was still sitting at 10.35, when I came away.

*June 29th.*—(Fine day, sunny.)

12.7 p.m.—Found bird sitting in same position as yesterday, head towards me, affording a very good front view. The bird kept constantly quivering the feathers of the throat. Just those particular feathers which make a sort of lappet dividing the throat and breast, were in a continual state of trembling, or vibration. The beak was very slightly open. I could catch no sound, except just once, for a single moment, the faintest possible "churr." There was a considerable wind, and the nettles all around the bird were swayed backwards and forwards (though the low plants were not to nearly the same extent). Yet no other feather of the bird's body was stirred, and I particularly noticed that one which projected a little from the side of the throat rather lower down was quite steady. Moreover, with the nettles still swaying in the wind, the tremulous motion I speak of would stop for a instant or two, and then recommence. During this time that eye of the bird which I could see was either shut or very slightly opened. Splendid view of the bird brooding to-day. The feathers of the breast are pressed outwards over the eggs, so that the bird seems sitting on a square pedestal of its own

\* I have omitted to note bird's return.

feathers. Could see one of the eggs projecting from under the feathers. Left at 12.44.

8.48 p.m.—Bird sitting. Position changed since morning. Wings and tail crossing dried stalk, as at first. Eyes closed. Other bird settled nine or ten paces from eggs on ground. Churred a little, and sat still. Sitting bird did not answer, seeming to be asleep. About nine the partner flew up and sat beside the sitting bird, who then just churred a little. The other did not “churr,” and almost immediately flew away quaw-eeing. The other still sat on, and seemed to go to sleep again.

9.15.—The partner again settled on ground near and churred a little, the sitting bird taking no notice. The latter now moved, and two little white fluffy things (as at that distance and in the waning light they seemed to me to be) scrambled from beneath her. They were the chicks.

(To be continued.)

THE HAUNT OF THE RING-OUZEL  
(*TURDUS TORQUATUS*).

By C. TROLLOPE.

SOME birds seem to belong to all scenery alike; others love only the waste common land, the stream, or the sea-shore; while a third division, *οἱ ἐπλεκτοί*, are only to be found in one or two favoured counties in the whole of England. Of these last are the Ring-Ouzels. Dartmoor, the hills of Derbyshire, the Yorkshire Moors, are perhaps the best known of their summer haunts, but there is a little-known nook of Western Herefordshire to which they come with unfailing regularity. There they have entrenched themselves among the wild hills known in the Ordnance map as the Black Mountains; and there, in the May of this year, I journeyed with a friend whose love of birds at least equals, if I will not allow that it surpasses, my own, to see them at home.

The way to the dingle which the Ring-Ouzels love, took us first through a country—the country around the foot of these hills—which was curiously like some out-of-the-way corner of Brittany. The small rough fields, where gorse takes up much space from the poor grass; the small fields of hand-sown wheat; the tall hedges, sweet with bird-cherry, with pink crab trees, with yet sweeter may blossom; the brown babbling trout-stream running down the valley; the white rough homesteads; the small farms of so few acres, farmed by the holders with slow toil and antiquated methods, and not by hired labourers who must needs bring their work up to the perfection which he who pays for labour naturally requires:—all this had some unique foreign charm, and recalled another country, dwelt in, as this, by dark-haired Celts, who cling with a like dogged faith to their own inherited thoughts, methods of work, superstitions not a few.

The way to the hills leads through such a country as this, but when the mountains are reached civilization disappears, and spring too, although it is the latter end of May. In the sheltered

dampness, indeed, under slabs of rock, the *Cystopteris fragilis* and the gleaming white flowers of the familiar wood sorrel are seen, and always inseparable; and on the lower edges of the hill, where the little streams soak out, we found the butterwort in abundance, its parchment-like leaves with their curled edges shining out star-like in the still wintry grass. But on the mountain-top, where other and stranger plants grow among the dark bog-pools, there was as yet no sign of summer life. Only the diminutive *Luzula spicata* did what it could to make colour, with its golden anthers gleaming from brown flowers amidst the waste of heather, which had as yet put out no spring shoots. We only saw one butterfly, a *Pieris napi*, and that seemed half asleep, perhaps wholly disappointed in a world too wet for its fresh wings. The only links with the spring, the almost summer indeed, of the valley were the numbers of Common Heath moths which were fluttering among the heather, undismayed by the showery day.

We had to cross two wild heather-clad hills before we reached the Ring-Ouzels' haunt, but when we reached it we owned that they were birds of taste. At the head of their dingle two hills join, and there a waterfall runs down, its course marked among the rocks by brightest green of soft, cushiony moss, by tufts of *Nephrodium dilatatum*. The scene was desolate wildness, bounded on the west by the steep rocks and the waterfall, on the north and south by the two bare mountain sides, while on the east stretched the at first narrow valley, with its brawling stream. The mountains were patterned over by great stones, by larger slabs of fallen rock, by patches of heather, black, tragic, in colour as if burnt, and showing yet no tinge of spring green, by patches of bilberry covered by pinky green leaves and a few pink flowers, but which in the distance and in the mass seem only a dull sullen yellow. Only one tree broke the straight sky-line of the solemn mountains, a rowan tree growing high up amid the rocks, and as yet destitute of leaves.

It was a land of waters. I tried, as I sat and waited for the coy Ring-Ouzels, to think of "the silence which is among the hills," but the thought did not do. The air was full of the noise of the water-pipes: water leaping down the head of the dingle, water murmuring on down the valley, water springing out of the mountain sides and sliding over the grass in narrow streams



which had not had time to make a channel for themselves, water spreading out into spongy places or disappearing suddenly underground, whence we still heard it trickling mysterious, like water in a dream, and reappearing many feet lower down the mountain slope.

At first we seem to see no bird, except a little lonely Wren who sings persistently, its voice rising shrill above the water-pipes. And, crossing the mountain, Meadow Pipits had been our constant companions; but here, in the dingle, there seemed to be no bird in the universe save that solitary Wren.

Yes. After that patient waiting which all bird lovers know so well, a Rock Dove, blue, smaller by many inches than our familiar Wood Pigeon and of less swift flight, flew out from the rocks by the waterfall and crossed the ravine. They build here in community, and once a wanderer, who often rambles lonely through these untrodden ways, caught one in his hand on its rude nest on a ledge or rock—such was its ignorance, its sweet trustfulness. And as he let it go into the sunlight he saw the sheen of iridescent green on its lustrous breast, and remembered that centuries ago the Dove's feathers of "pale-green gold" had been noticed, and perhaps loved, under far-away skies.

Then the Wheatears appeared from we knew not where, flitting restlessly from rock to rock, and uttering a soft and sweet call-note. Their song, sung so often to the listening waste alone, we did not hear; but we found a nest. For as we went up a little sheep track a bird slipped out from under a great slab of rock and flew up the dingle, showing no further anxiety for its treasures. And there, far under the stone as arm could reach, in darkness and in damp, was the warm nest and four eggs of faded blue.

Soon the Ring-Ouzels began to show themselves, but the eye so loses itself on these wide still wastes, amid the spacious simplicity of great sky and great mountain, that it is difficult at first to follow these little specks of flitting life or to mark them with our field glasses. And, if the truth must be told, in the hours spent among them we added little or nothing to the information with which our books provided us. The birds would not come anear or suffer us to come near them. They kept indeed a suspicious eye upon us, flitting in the direction in which we walked, perching on heather or slab of rock to watch our move-

ments, but always far away. Their loud *bravura* song we never heard; nor did they utter that harsh alarm cry for which we listened. But we had had, at least, the joy of penetrating to the heart of their mountain fastnesses, their sanctuary among the hills; and henceforth we knew the Ring-Ouzels as we should never have known them had we not seen them on their native heath.

## A RAMBLE NEAR SYDNEY.

BY DAVID G. STEAD.

PERHAPS few cities are so admirably situated as Sydney, placed as it is upon the shores of that much-talked-of, much admired, but never adequately described harbour, Port Jackson.

To the ordinary resident in Sydney nothing is more welcome than the advent of a holiday, for then full advantage is taken of the wondrous plenitude of resorts lying in the many arms and indentations of the harbour; these, from their number alone, making the ever arising question, "Where shall we go?" quite a knotty problem, which at times is not easily decided.

The naturalist—especially the marine zoologist—who, of course, looks at things in quite a different light, is still at times considerably puzzled, on account of the multiplicity of places of interest to be reached comfortably by coach, rail, or boat within the scope of one day's wanderings.

What is undoubtedly the most popular resort of Port Jackson is Manly, "the Brighton of the South," which on one side faces the harbour, and on the other the Pacific Ocean. The harbour side forms a veritable "happy hunting ground" for the zoologist, as around the rocks and amongst the dense seaweed with which they are clothed a great variety of animal forms—chiefly Crustacea and many-hued fishes—is to be found.

My reason for giving this short preamble, is, that I wish to introduce to our readers a realm that is overflowing with interest to the zoologist, and one that has been the scene of many of my wanderings, including the one now described. But as very few will be familiar with the locality, and as most naturally wish to know a little about any place under consideration, I feel some justification in thus introducing it.

I may add, that, as the following observations have been quoted almost verbatim from my note-book, they are necessarily of a somewhat general nature, though chiefly—as in this case they should be—zoological.

April 23rd, 1899.—To-day I wended my way to Manly, and from thence journeyed by coach to Rocklily, some miles along the coast. It was a most enjoyable and perfect day. As we drove along through the balmy bracing atmosphere, with the occasional buzz of insects coming to our ears, ever and anon could be heard the extremely melodious cry of the Collared Crow-Shrike (*Cracticus torquatus*), one of the so-called "Butcher Birds," rising above the more feeble twitterings and chirpings of the smaller birds. *En route* also I was much impressed and interested by the gradual change in the physical aspect of the land as we began to come out upon the "Narrabeen Shales" (which here crop out from under the "Hawkesbury Sandstone"). Amongst the objects of interest which were passed I must not omit to mention several beautiful cabbage-tree palms, which reared their stately crowns high in air.

After a pleasant drive in the genial sunshine we arrived at Rocklily, where I alighted, and whence I began to walk on my return journey to Manly *viâ* the coast. Whilst making my way from there to the coast (a distance of about half a mile) I was greatly amused by the actions of a small insectivorous bird, which, by feigning to be wounded, did its best to attract me away from where I knew its nest must be situated; however, as I had experienced that before, I took no notice of it. On Rocklily beach I found indisputable evidence that the sand-dunes were resting upon shales, as at intervals portions of these shales cropped out, and here and there were little streamlets of salt water oozing out of the sand (all at the one level), the sole visible occupants of which were a few small Amphipoda. On the drier parts of this and the succeeding beaches the tiny burrows of minute grey Isopoda, as well as the animals themselves, were much in evidence. Here also were to be seen the burrows of the beautiful swift-footed Crab (*Ocypoda cordimana*), which penetrate obliquely into the sand for some distance.

After traversing these beaches, and while rounding a headland, I disturbed several Ravens, *Corvus australis* (the "Wah-gun" of the Bourke district aborigines), which were walking about at the water's edge; also a Cormorant (*Phalacrocorax novæ-hollandiæ*), which was perched sentinel-like upon the adjacent rocks. (Incidentally, I might mention that there is a price set



upon the heads of Cormorants, on account of their depredations amongst the piscine tribes, and the supposed injury caused thereby to our fisheries; but personally, I am of opinion that it is rather misplaced, as they also dispose of a large quantity of floating offal, thereby rendering us a great service.) At this point my attention was attracted by a large mass of rock which had fallen from the top of the cliff, and which displayed in a very interesting manner the junction of the Narrabeen Shales and Hawkesbury Sandstone. It consisted mainly of sandstone, but on the under surface there was a layer of shale about three inches in thickness. This layer possessed all the appearance of mud, of which the surface had been formed into small undulations by the action of water, then sun-dried, thereby cracking in all directions. It was evidently thus upon the day that the sand was swept over it, filling up the cracks, and thus preserving their contours admirably.

Whilst traversing the huge beach which here intervened, it was very pleasing to observe the evolutions of a number of Porpoises (*Phocæna*) which were here disporting themselves. The sun was shining full upon them (from behind me), so that I was enabled to see them distinctly as they often sprang completely out of the water. I was here also interested by the performance of a "Little Black-and-White Cormorant" (*Phalacrocorax melanoleucus*), which at one time would be flying lightly over the water, at another making a terrific vertical plunge for some fish which happened to be near the surface. A little farther along this beach I came across a flock of Sea-Gulls (*Larus novæ-hollandiæ*). At my approach they all, with the exception of one, flew away, which remaining bird, I perceived, was wounded. After a little manipulation I managed to "round it off" away from the water, and succeeded in making it cross the road (which here skirts the beach) into the bush, whereupon I secured it. It turned out to be a most beautiful specimen. Before finishing this beach (which was the largest travelled over during the day), I turned my attention to numbers of the *Physalia*, or "Portuguese Man-o'-war," which were being washed up. Nothing can excel in point of beauty the exquisite iridescent tints of these little creatures as they sail or float in on the tide by means of the *pneumatophore* or "float" with which they are provided, and nothing could appear

more peaceful or less likely to do harm; but woe betide the unlucky and unsuspecting wader or bather who becomes entangled in their tentacles, for, by means of the stinging capsules with which they are studded, they are capable of inflicting the most acute pain and inflammation. These tentacles, which may be drawn close up to the pneumatophore, are capable of being let out to a length of thirty feet or more.

After collecting a few of these *Physalia*, I once more resumed my journey, and at last finished this seemingly almost interminable beach, and rested myself for awhile at the foot of the landward slope of the headland ("Long Reef"), which here juts out into the sea. I say "rested"; rather should I say I would have, but for the attacks of a relentless little band of mosquitoes which gave me their undivided attention, and seemed bent upon making as close an acquaintance with me as possible.

I now crossed this neck of land to the next beach (also a great length), and in the distance on the waters of the bay espied what I at first took to be the heads of a great number of the fronds of the large brown seaweed protruding above water (although it struck me as being rather strange that, supposing it to be seaweed, there was no broken water around, it being in the middle of the bay); but, upon drawing closer, I found, to my delight, that it was a large flock—consisting of from eighty to ninety\*—of Black Swans (*Cygnus atratus*), which were resting and pluming their feathers upon the then placid waters of the bay. After watching their movements for some time I marched onward, and, upon reaching the southern extremity of the beach, looked back, and found that they had all betaken themselves to the neighbouring "Deewhy" lagoon, which is separated from the ocean—as are most of the lagoons along the coast—by the sand-dunes only. Here it was that I could not help contrasting the headland (Deewhy Head), near which I was standing, with the one (Long Reef) on the other side of the bay. The former is composed solely of the "Hawkesbury Sandstone," and, as a consequence, is high, rugged, and precipitous; while, on the other hand, the latter consists entirely of "Narrabeen Shales," is

\* This was a very large flock, the average consisting of from thirty to forty individuals.

comparatively low, has a gentle slope inland, and has a rapidly disintegrating sea-face composed in great part of fairly soft clays. The hardest part of my walk now began, as I had left the easy slopes of the shales behind. Here amongst the rocks, as would be expected, animal life in the way of birds, reptiles, and insects became more abundant, and I began to keep a sharp look-out, especially for the smaller Reptilia; nor was I disappointed, for, after turning over a few loose flat stones on the southern slope, I found one under which was concealed an almost typical collection of the "small fry" usually found in these localities. This assortment consisted of—1, a large flat side-walking Spider; 2, several specimens of the large black Wood-bug (which, after the manner of its kind, emits at times a most disagreeable odour); 3, some small prettily marked Cockroaches; 4, two species of Ant; 5, a collection of Termites, or "White Ants"; 6, a small Centipede;—all these in the way of Arthropoda. Then of Reptilia there were three species, comprising two specimens of a small "Rock-Gecko" (*Gehyra variegata*), one of a fine mottled Lizard (*Egernia whitei*), which grows to a length of twelve or thirteen inches (including tail), and, lastly, the exquisitely beautiful and agile little Lizard (*Lygosoma tæniolatum*). The last mentioned is very beautifully marked, having on its dorsal aspect brown yellow, and white longitudinal stripes running the whole length of the body; these,—with the exception of one brown stripe on each side which forms a line of demarcation between the dorsal and ventral surfaces,—upon reaching the tail gradually fade into a light yellowish colour. But it is when the sun is shining on it that this little creature is seen at its best, for then the whole of the many-striped body shines again; and the tail possesses a semi-transparent roseate hue. The little "Rock-Gecko" (*Gehyra variegata*) also deserves a word in passing. When one is picked up it begins to squirm its subcylindrical truncate tail about in a most ridiculous manner, doubling it up in a somewhat similar fashion to the Scorpion, and seemingly doing all it can to give the impression that the tail is a stinging organ. In man—at any rate, in most cases—it has the desired effect,\* and has thereby earned for itself the title of "Rock-Scorpion," this title being

\* I am of opinion that the same effect would be produced upon many of the marsupials or birds that have come into contact with Scorpions.

also held by a neighbouring species (*Gymnodactylus platurus*), in which the tail is even more like that of the Scorpion. This latter species, especially in some parts of the country, is held in great abhorrence on account of its supposed stinging powers, but nothing could be more fallacious, as it is perfectly harmless, and its appearance is its only defence. Both species have also the power of voluntarily throwing off the squirming tail, thus distracting attention while the animal is making its escape. These Geckos are at times covered apparently with bright red or pink tubercles. I say "apparently," because on examination with an ordinary hand-lens these "tubercles" are resolved into minute ticks, which by contrast with the brown body are extremely noticeable.

Of course, it is not usual to find all the foregoing animals upon such a small area (about a foot square), and at least one of the reptiles crept under as I approached.

After proceeding a little farther, I came upon a specimen of Cunningham's Lizard (*Egernia cunninghami*), the most salient feature of which is its extremely rough tail. In disposition it is inclined to be sluggish, but when pursued it can manage to progress at a fair rate of speed.

Whilst crossing this headland I observed a "White-bellied Sea-Eagle" (*Haliaëtus leucogaster*) soaring around at a considerable altitude, and standing out in bold relief against the azure sky.

As the afternoon was wearing on, and I still had a considerable distance to traverse, I decided to halt nowhere else; so, as soon as I had passed this headland, I hastened over the beautiful sandy beach (about half a mile in extent) which stretches away from its base; though not so fast but that I had time to observe a number of the burrows of that interesting little bright-coloured "Soldier-Crab" (*Mycteris longicarpus*). These burrows are surrounded by numberless little round pellets of sand, which the busy little crustaceans bring up to the surface during the course of their excavations.

Departing from this beach, I began to walk across country through the scrub, as I was drawing near to Port Jackson, and wished to strike the road (along which I had passed in the coach during the early part of the day) as soon as possible. On the way through the bush I noticed a great many of



the short burrows (averaging about six inches in depth) made by the Bandicoots (*Perameles obesula* and *P. nasuta*) while in search of their food, this consisting mainly of insect-larvæ, worms, and roots. On either side were also to be seen the miniature white sandy tracks "winding their tortuous ways along," made by those little "Macadams," the Ants.

Here the bushes were almost alive with Common Sparrows and Honey-Eaters (*Meliornis novæ-hollandiæ*), and the united chirruping of their thousands made quite a tumult. While speaking of this locality, I think I may presume sufficiently upon the forbearance of the reader to relate a little incident which occurred hereabout. I find, on referring to my note-book, that it was on Sept. 27th, 1896. I had come down to Manly, and walked from thence to "Curl Curl" Bay. When returning, and on the look-out for birds and reptiles, I came suddenly upon a small brown-coloured\* Snake, which darted from me, and started twisting and turning, a short distance away, in a most curious and remarkable manner. Although I walked up and stood right over it, so rapid were its movements, and so nearly did its colour resemble the dead leaves with which it was surrounded, that had it not been for an occasional glimpse of the ventral aspect (which was of a dirty white hue) it would have been utterly impossible for me to distinguish it. Now, all the time the Snake was squirming about, doubtless trying to hide itself under the leaves (and this is to me the most interesting part), it uttered a peculiar little chirping sound, somewhat similar to the call of a young bird. As I did not wish to kill it, I got a small pronged stick, intending to catch it alive; but the moment I touched it with the stick it disappeared like a flash—whither, I know not—leaving me blankly staring at the ground. I was quite dumfounded, as, although watching the animal intently, I did not see it go. I scraped the leaves off the ground for some distance around, but did not discover any holes, and, though I hunted "high and low," could not find any trace of the Snake; I therefore came to the conclusion that it had escaped altogether, the protective coloration being greatly in its favour. I have only heard of one

\* I purposely say "brown-coloured," so as not to mislead the reader into thinking that I mean what is commonly known here as the Brown Snake (*Diemenia superciliosa*).

other instance in this city of a Snake making this chirping sound, but perhaps some of our readers may have had a somewhat similar experience; if so, I would be pleased to hear of it.

To resume my narrative. After leaving this locality I continued my journey along a cart-track through the scrub, nothing of special importance being noticed excepting an occasional specimen of a large and beautiful Spider (*Nephila*), which here and there stretches its beautiful yellow silken web right across the track. These webs are exceedingly strong, as well they might be, the prey of the Spider including such large insects as the Cicadas, Phasmids, &c.; also at times a small bird—the “Silver-Eye” (*Zosterops*)—has been found entangled in the meshes.

Leaving this track, and after trudging along rather wearily for about two miles, I reached Manly just as twilight was setting in, and the Bats were coming out in search of their evening meal. In due course I arrived home, thoroughly tired out, but more than ever impressed with a sense of the immensity of Nature, and imbued with a feeling of extreme gratification and thankfulness at being one of the comparative few to whom has been given the desire to know her secrets.

## OBITUARY.

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JOHN CORDEAUX.

By the death of Mr. John Cordeaux this magazine has lost one of its oldest and most esteemed contributors. From April, 1864, to May of the present year there has appeared in our pages, from his pen alone, a series of zoological notes and observations that collected would be sufficient material for a fair-sized volume, and one that would, apart from its valuable contribution to avian migration, be a handbook to the natural history of Lincolnshire.

Mr. Cordeaux, who died at Great Cotes House, in Lincolnshire, on August 1st, at the age of sixty-nine, was one of the recognized field naturalists of the day, and was especially an ornithologist, and an authority on the birds of the county in which he lived. His 'Birds of the Humber District' was first published in 1873, and a new and revised edition to April, 1899, was noticed in our last issue. Formerly engaged in farming a portion of the Sutton estate, he had relinquished his agricultural pursuits and devoted the later years of his life to sport and natural history. It was to the phenomena of avian migration that he devoted much time, and he mainly helped to achieve the very considerable results that have already obtained to that branch of natural science. As early as 1874 he journeyed to Heligoland, and visited Gätke to compare notes on the subject which so interested both of them, and with which their names are so identified. In 1875 he published in the 'Ibis' a critical and descriptive notice of Gätke's wonderful collection of birds taken on what might well be called Gätke's Island. In 1879 a fresh impetus was given to the study when he joined Mr. Harvie Brown in a successful endeavour to enlist the services of the keepers of lightships and lighthouses along our coasts in making and recording observations as to the movements of our migratory birds. The Committee appointed by the British Association to further this undertaking, of which he was the hard-working

secretary, and the publication nine years afterwards of Mr. Eagle Clarke's "Digest of the Observations," sufficiently appraise the value of this work. The Acts for the protection of sea- and wild-fowl gave him much occupation, and he was one of the expert witnesses before a Select Committee of the House of Commons which was formed to take evidence and advice on the subject, the particulars of which are to be found in a Blue Book published in 1873.

Besides being a frequent and most valued contributor to our pages, as well as to the 'Naturalist,' 'Ibis,' Meteorological Society's 'Journal,' and other publications in sympathy with his favourite studies, he was a member of the British Ornithologists' Union; F.R.G.S.; and President, in 1894, of the Lincolnshire Naturalists' Union. His last publication was apparently in the August number of the 'Naturalist,' and, strangely, was an obituary notice of his late friend and brother naturalist Dr. Bendelack Hewetson, the last paragraph of which contains such prophetic sentences—when read to-day—as "when all present voices have become silent," and a reference to the "valley of shadows."

John Cordeaux was that type of English country gentleman who was not only esquire among the inhabitants of his neighbourhood, but also over the fauna of his county.



## NOTES AND QUERIES.

## MAMMALIA.

## CARNIVORA.

**Seals in the Wash.**—It may be worth recording that there still exists a colony of Seals in the Wash. On Aug. 18th, when sailing in a small yacht from Hunstanton to Lynn, we had a good view of a party of seven lying on a sand-bank a few miles from Wolferton; and, returning in the evening, we saw the same, or another lot, near the same place. The day was rather misty, but there seemed to be considerable variation both in size and colour among the party. Our boatman assured us that they breed in the locality, and that he had seen much larger parties on the sand-banks. It is much to be hoped that these most interesting animals will not be wantonly destroyed, or in any way molested.—JULIAN G. TUCK (Tostock Rectory, Bury St. Edmunds).

## AVES.

**Variety of Song-Thrush in the New Forest.**—In July a somewhat peculiar variety of *Turdus musicus* was killed, and at the same time another almost similar specimen was seen—possibly both of one brood—in one of the woods of the forest. It is not mature, being about three parts grown, and its tail is rather short. On dissection it proved to be a male, and the following description indicates its unusual appearance:—Crown, back, and tail almost white; throat, cheeks, and breast pale buff, the usual crescentic black spots occupying the central portion of the tips of each feather being white, conspicuously so when closely examined; wings rather darker, more dirty looking than the back, but the reddish tawny outer edges of the primaries and wing-coverts are very marked, forming a double bar across the wing; legs and feet pale brown; eyes normal. On several previous occasions I have seen white, or nearly white, Thrushes, but they invariably had pink eyes, being albinos, as I supposed; but none were so near maturity as the one I have attempted to describe. A few years ago I recollect a man finding a nest containing four young ones, two of which were white. He took the whole brood with the intention of rearing all, but both white individuals died within a week of their capture, indicating perhaps that they were not so strong as their darker and more normally hued brothers. The latter grew to maturity, and, being both males,

rewarded their protector with abundance of song. — G. B. CORBIN (Ringwood, Hants).

**White Wagtails in County Cork.**—Seeing in your last issue (*ante*, p. 364) Mr. Robert Warren's note on the occurrence of *Motacilla alba* in North-western Ireland, I think it may be interesting to state that I observed one bird of that species on the river Lee, Co. Cork, on April 20th of this year. The wind on 15th, 16th, and 17th was N. and N.E.; on 18th, 19th, and 20th, S. and S.W.—WM. T. CRAWSHAY (Chesthill, Perthshire).

**Girl Bunting probably often overlooked.**—In reference to the note on *Emberiza cirrus* (*ante*, p. 322), I think that the bird is still probably overlooked in many parts of its range. Some time ago, when I reported the occurrence of a bird I believed to be *E. cirrus* in North Cheshire, I was promptly reminded that the species had never before been known in the district. With due care I therefore examined the specimens of *E. cirrus* and *E. citrinella* exhibited in the Natural History Museum, fully expecting to find I had been in error. However, the true *E. cirrus* at any rate resembled the bird I had seen quite as closely as did the common *E. citrinella*, and I returned unconvinced, after repeated examinations. On June 16th, whilst cycling through Dunham Massey, Cheshire, I saw a bird exactly resembling the first I had seen with a dark mark on the throat. I at once dismounted, but the bird settled in some growing crops, and did not reappear. As neither of the birds I saw were shot, it will, I think, be better to suspend judgment, and I am willing to admit after all they may only have been varieties of *E. citrinella*; but I hope these two suspicious occurrences, together with the recent discovery of the species in Wales, will stimulate ornithologists to keep a sharp look out for the true *E. cirrus*.—GRAHAM RENSHAW (Sale Bridge House, Sale, Manchester).

**Swifts Fighting.**—According to an editorial note (*ante*, p. 269), Bree stated he had been told that Swifts had been found grappled together on the ground by their claws. It may interest readers of 'The Zoologist' to know that some time ago I caught two specimens of the common Indian Swift (*Cypselus affinis*) in this predicament in the Indian Museum buildings. When taken up and separated they proved well enough to rise and fly when placed on the floor. This species, I find, can almost invariably rise from a flat surface; I once found one which could not, but flew away on being thrown into the air. Does the power of rising from the ground vary in different individuals in Swifts? It would almost seem so, for Dr. P. Rendall, writing ('Ibis,' 1892, p. 222) of this same species (*Cypselus affinis*) in Africa, says, "This bird is unable to rise from the ground." The gait of *C. affinis* on the flat is a plantigrade crawl, the feet resting on the ground

to the hock, and being moved alternately. This I ascertained by catching and tying the wings of an adult specimen the other day. I thought the point worthy of investigation, as so few adult birds are plantigrade, though I have found the young of Rollers (*Coracias indica*), Woodpeckers (*Brachypternus aurantius*), and Barbets (*Cyanops asiatica* and *Xantholæma hæmatocephala*) to be so in the course of my investigations out here. Seebohm, I believe, stated that the Guillemot and Razorbill walked on the tarsus, but this is not, in my experience, invariably the case with the former, at all events.—F. FINN (Indian Museum, Calcutta).

**Curious Variety of the Green Woodpecker.**—My brother and I have just seen, in the local birdstuffer's shop, what we consider a most curious and handsome specimen of the Green Woodpecker (*Gecinus viridis*). The bird was a pale greenish yellow colour all over the body. There was a scanty amount of red over the head, and the "moustache" was hardly noticeable. It was a female, and was shot this year near Bath. Knowing that Woodpeckers are not generally subject to great variation, I hope this note may prove interesting. — CHARLES B. HORSBRUGH (4, Richmond Hill, Bath).

**Demoiselle Crane on the Norfolk Coast.**—A female specimen of *Grus virgo* was shot at Brancaster, on the Norfolk coast, on July 31st, and sent to Mr. Clarke, of Snettisham, for preservation, by whose courtesy I had the pleasure of examining it. It had been feeding on the growing corn, and was shot in a corn-field. Whether it was an escaped bird, or whether it may be allowed to rank as an addition to the Norfolk list, I am content to leave to those of your contributors who have for so many years worked at the avifauna of the county to determine.—JULIAN G. TUCK (Tostock Rectory, Bury St. Edmunds).

**Grey Plover in Summer Plumage in Yorks.**—We have just received (Aug. 19th) a female Grey Plover (*Squatarola helvetica*) for preservation, which was shot by Mr. J. J. A. Riley on Midgley Moor, Yorks. We think the appearance of this bird in summer plumage in this locality a somewhat rare occurrence.—ROWLAND WARD (166, Piccadilly).

**Curlew (*Numenius arquata*) at Sea.**—At 9 a.m. on Aug. 5th, at a distance of about twenty miles from the south-west coast of Ireland, I observed three Curlews flying at a height of about a hundred and fifty feet above the sea. The birds held a south-westerly course, and came close to the ship, which was not moving at the time; they then altered the direction of their flight, and disappeared to the south-east. The morning was very bright and fine. I do not recollect to have seen these birds so far out at sea before.—K. HURLSTONE JONES (H.M.S. 'Repulse,' Channel Squadron).

Distribution of a private Collection. — The museum of the late J. R. Wallace, of Distington, was sold by auction on August 1st and following days. Mr. Wallace lived for many years in the Isle of Man, and several of his British birds were procured on that island. Lot 1145 included an immature Black-tailed Godwit, procured on the Isle of Man, and presented to Mr. Wallace by Dr. Hulme. Lot 1160 included a Grey Phalarope, in autumn dress, from Man. Lot 1188 included a Richardson's Skua from Langness Point. Lots 1210 and 1227 included female Smews from the Isle of Man. Lots 1229 and 1230 consisted of two pairs of Shovellers from the Isle of Man. Lot 1241 was a Whooper from the Isle of Man. Lot 1211 consisted of a Brent and a Bernacle Goose from the same. I also bought a Cornish Chough from the island. The rarest Cumbrian specimen was a well authenticated example (immature) of the Spoonbill. Another bird which I secured was a hybrid between the Hooded and Carrion Crows, killed at St. Bees. The three last named go to the Carlisle Museum. There was also a local Hoopoe, but it was much faded, and we have already two local specimens in the Carlisle Museum; so I did not bid for it. A fair specimen of the Ivory-billed Woodpecker and some other good birds were bought for the Tring Museum.—H. A. MACPHERSON (Allonby Vicarage, Maryport).

#### AVICULTURAL NOTES.

Cape Scops Owl (*Scops capensis*) in Captivity. — I had the rare pleasure of observing one of these queer little Owls in captivity. It lived in a small cage for about a month. Its food consisted mainly of Rats, which were trapped, killed, and given him. It was astonishing what sized Rats the little Owl could devour. He would seize them with one foot, and tear off the flesh, leaving nothing but the head. Small mice were swallowed whole. He also ate small birds and raw beef occasionally. When approached he would erect his ears, blink and roll his eyes, half-spread the wings, and rock from side to side with a sort of circular motion, thus presenting a very comical appearance. If I stuck my finger into his cage, he would peck at it violently. He had still another method of showing his displeasure, or expressing his rage, by snapping his jaws together with a loud clacking noise. This little Owl only measured  $6\frac{1}{2}$  in. in length. Iris light golden yellow; feet and bill greyish black.—ALWIN C. HAAGNER (Modderfontein, Transvaal).

[I kept a specimen of the Spotted Eagle-Owl (*Bubo maculosus*) for some years in captivity. I used at first to feed this bird largely on *live Rats*, which it attacked most courageously, and would sit on the body of its victim all day, though it always kept the Rat's head outside its feet both before and after death. After some months in captivity it lost its courage, and would not



approach these rodents. Mice it would swallow at once, and at any time of the day. This specimen was captured one evening in the heart of Pretoria, where it had flown against the telegraph-wires, and had fallen to the ground. When disturbed it uttered the clacking noise well described above by Mr. Haagner. I shot many specimens by daylight. They are artful, cowardly birds, running, or rather slinking, among the herbage before taking flight, and have to be followed down. In the pursuit of this bird, I felt like running down a thief who always tried to hide.—ED.]

## REPTILIA.

**The Cape Monitor: Correction.**—With reference to the remarks of the Editor of this magazine at the foot of my note on this animal (*ante*, p. 226), and to those of Mr. Charles Tanner (*ante*, p. 272), I find I was guilty of an error. The fact is, I wrote *albigularis* by mistake, and only after perusing the first mentioned remarks did I become aware of my error. Carefully examining the reptiles, I found that they belonged to the species *V. niloticus*. This is a certainty, as, in addition to the other points of distinction, the nostril is situated midway between the tip of the snout and eye, rather nearer the eye. With reference to my other remarks concerning the creature's habits in captivity, I can only repeat what I have said, having carefully verified my statements. —ALWIN C. HAAGNER (Modderfontein, Transvaal).

## PISCES.

**Pelamid in Cornwall.**—On Aug. 17th I captured, in Helford River, a Pelamid, or Belted Bonito, *Pelamys sarda* (Day). This specimen (a male) measures 19½ in. long, and weighed 3½ lb. It has only five broad vertical bars on the back, not thirteen, as figured by Day. The narrow oblique stripes, however, correspond with Day's figure, and are ten in number. The stomach was empty, except for a few pieces of vertebral column of some small fish, apparently Pilchard. My specimen is being preserved by the Marine Biological Society at Plymouth. Day says of this fish that "it is abundantly spread throughout the Mediterranean to the Black Sea, and also through the Atlantic Ocean"; so it seems curious that it should not occur more frequently on our coasts.—H. LEYBORNE POPHAM (R. Western Yacht Club, Plymouth).

## INSECTA.

**Great Wood-boring Wasp (*Sirex gigas*) in Ireland.**—It may interest Mr. Pentland (*cf. ante*, p. 184) and others to know that a gamekeeper obtained two Great Wood-boring Wasps (*Sirex gigas*) last summer in Co. Down, and that I was given another specimen from the same county.

I once saw a Spider catch a *Sirex gigas* by the antenna, and hold it till it succumbed.—CHARLES B. HORSBRUGH (4, Richmond Hill, Bath).

[In the 'Irish Naturalist' for this year (p. 26), Mr. W. F. Johnson writes:—" *Sirex gigas* has made its appearance in widely separated localities. I received three specimens, all females; the first was captured at Acton House, the next came from Loughgall, and the third from Downpatrick. Evidently this undesirable addition to our insect fauna is making every effort to establish itself in Ireland."—ED.]

*Vanessa atalanta* Twenty Miles from Land.—A specimen of this butterfly flew on board the ship when we were some twenty miles from the Irish coast, on Aug. 5th. It was in perfect condition, and very lively. I observed it still about, and still very lively, thirty-six hours later, whilst coming up the English Channel. As we had not been in port for six days, it almost certainly came from the coast. A small moth—some species of *Pyralis*—came on board at the same time.—K. HURLSTONE JONES (H.M.S. 'Repulse,' Channel Squadron).

## NOTICES OF NEW BOOKS.

*The Fauna of Shropshire.* By H. EDWARD FORREST. Shrewsbury: L. Wilding. London: Terry & Company.

THIS is a very welcome addition to our county faunistic handbooks. "The whole area of Shropshire is only about 1340 square miles, yet within this compass we have plateaus and plains, hills and vales, boggy flats and heathery moors, cornlands and pastures, wooded slopes and barren crags, meres and ponds, streams big and little, and—most important of all—the river Severn." Sea- and shore-birds are attracted by the meres, and the still reaches of the Severn, which river again is followed in its course by many birds—as Sandpipers—and fishes. Among the mammals enumerated, "the Wolf, the Roebuck, and the Wild Boar have been long extinct, and the Pine Marten disappeared this century; while the Polecat is on the verge of extinction"; the Wild Ox is also included, though this animal is now of antiquarian interest. Of birds 250 species are enumerated, of which 87 are classed as residents, 34 as summer migrants, 17 birds of passage, 40 winter migrants, and 72 as waifs or accidental visitors. Six reptiles (one of which, the Smooth Snake (*Colonnella lævis*) is included, at present, on very slight authority); seven Amphibians, twenty-nine Fishes,—of which the Sea Trout (*Salmo trutta*) is now added by courtesy,—and three Lampreys (Lowest Vertebrates) complete the subject-matter of the volume.

One of the most interesting features of this book is to be found in the lives and portraits of Shropshire naturalists, which include such well-known names as Eyton, Rocke, and Houghton. Charles Darwin was also a Salopian, but *his* work was confined to no county and limited to no country. Another excellent idea is the printing of the names of resident birds in capitals, and of visitors and casual wanderers in ordinary type. To show the contrast, however, different coloured printing would greatly facili-

tate the aim. Other assistance is rendered by the letter B attached to a name, denoting "bred in Shropshire," while with migrants the average dates of arrival and departure are also given below the names. Many photographic plates of groups of excellently "set-up" mammals and birds give a distinctive charm to one of those volumes which are generally procured with avidity by students and lovers of our British fauna.

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*The Birds of Breconshire.* By E. CAMBRIDGE PHILLIPS, F.L.S., &c.  
Brecon: Edwin Davies.

IN the pages of this magazine there has appeared, from time to time, a series of papers by Mr. Phillips on the Birds of Breconshire. These were reprinted in 1882 for private circulation, and the same re-written and considerably enlarged it is now our pleasure to peruse and notice. "Breconshire is not a large county, and is so well known that it needs but a slight description. It embraces among its general features, in a marked degree, mountain and moor, valley and hill; it has one large lake, Llangorse, with numerous mountain tarns, and is drained by the Usk and partly by the Wye and their tributaries. Yet with all these advantages of nature the ornithology of the county is not so varied as might be supposed."

The Kite (*Milvus regalis*) up to the year 1889 had increased considerably, but in that spring many were killed, three or four close to the town. Even now, however (1899), a few pairs still breed, and are protected as far as possible in the county. The Marsh Harrier (*Circus æruginosus*), which was formerly common on the hills between the 'Storey Arms' and Merthyr, is now, unfortunately, supposed to be extinct. The Raven is generally considered to live to an old age, but it is well to obtain actual facts, and Mr. Phillips is able to refer to a bird which must have been fifty years old when it was killed by a dog. Severe cold causes strange messmates, and here we read of a Sparrowhawk roosting close by some Bantams in a thick holly-tree in the dead of winter; in similar weather a Jay was found feeding with the poultry in an aviary, where it must have pushed itself between the wires to get to the food. The varieties of food that birds



and all animals sometimes indulge in is here represented by an interesting fact. A Heron was killed in a field close by a stream, and its crop was found to be filled with Field Mice. This volume is full of "natural history" facts and observations, and is one of the few enumerations of a fauna which, apart from its scientific value, can be read with absolute pleasure. It refers to 198 species of birds.

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*Cambridge Natural History.* Vol. VI. Insects: Part II. By DAVID SHARP, M.A., M.B., &c. Macmillan & Co. Limited.

THIS is the second instalment and completion of an important contribution to a knowledge of entomology, by Dr. Sharp. The present volume includes the continuation of the Hymenoptera, Coleoptera, Strepsiptera, Lepidoptera, Diptera, Aphaniptera, Thysanoptera, Hemiptera, and Anoplura. The most distinctive contribution is that relating to the Coleoptera, an order to which the author has mostly devoted his time, and on which he is recognized as a considerable authority. The Coleoptera have long been classified in a somewhat archaic, if convenient, manner, and we are glad to see here a break from old tradition and a new arrangement proposed, commencing with the Lamellicornia, though these are separated from the Clavicornia by the Adephaga, a proposition which will probably be a more disturbing factor with many Coleopterists. These pages, however, are not the place for so purely a technical discussion, though the careful consideration of all proposed systems is generally pregnant to a further knowledge of the creatures on which such propositions are founded.

With the other orders much useful information abounds, though of course these lack the essential *imprimatur* which the special knowledge of the author gives to his treatment of the Coleoptera. The authorities quoted are naturally more selective than comprehensive, and although many references will be gladly appreciated by workers at these groups, the absence of other references is sometimes very accentuated.

We read that the number of described species of butterflies is probably about 13,000. Forty years ago the number known was not more than one-third or one-fourth of what it is at

present, and hence Dr. Sharp does not consider it too much to anticipate that 30,000 or even 40,000 forms may yet be acquired. We quite agree with him, however, in the opinion that "the species of *Rhopalocera* seem to be peculiarly liable to dimorphic, to seasonal, and to local variation; so that it is possible that ultimately the number of true species—that is, forms that do not breed together actually or by means of intermediates, morphological or chronological—may have to be considerably reduced."

In the almost congested entomological literature of the present day, this work will long maintain a distinctly acknowledged individuality.

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*Lancashire Sea Fisheries.* By CHARLES L. JACKSON.

Manchester: Abel Heywood & Son.

THIS is a polemic, but a valuable one. It is almost precisely on the lines and argument of Prof. McIntosh's 'Resources of the Sea,' which was noticed recently in these pages (*ante*, p. 188), being a protest against the State's interference with man's livelihood by means of the fishing industry. Of course this is a very wide question. Is our supply of marine fishes seriously jeopardized by the action of the free use of the trawl and net? Many hold that it is, as, for instance, Prof. Herdman, who is treated in this reprinted lecture very frankly by Mr. Jackson, who, on the contrary, holds that the enormous fecundity of most marine animals is an all-sufficient protection against the destructive influence of man. We have described this publication as a polemic, but a valuable one. Its very strenuous advocacy makes it the first; its many excellent recorded facts and observations redeem it, and constitute it a welcome addition to the literature of the subject. Perhaps, however, the author was more concerned with the controversial element; still the natural history reader will probably forget the sorrows of the fishermen, and revel in the anecdotal details of the life-histories of his prey.

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*A Handy Book of Fishery Management.* By J. W. WILLIS  
BUND, F.L.S. Lawrence & Bullen, Limited.

THE main teaching of this book, and which will attract our readers, is how to observe the life-histories of fishes. We have excellent field-ornithologists who have acquired their knowledge direct from nature, but how few have directed the same attention to freshwater fishes. In a moderately deep stream it is not so easy to decide always whether a fish is a Trout or a Grayling. But here a knowledge of habits will decide the question. A Trout can keep still, a Grayling cannot. "The rough tests are size for Salmon, immobility for Trout, mobility for Grayling." If any one wants to know if there are Tench in a pool, "let him go and sit beside it some warm evening in June, just before it is dark, and then, if he hears a splashing among the water-plants, and sees the leaves disturbed, he can rest quite certain that there are Tench in the pool, and that they are spawning." And many other hints to the observer in a little-worked study is afforded, which should render a stream as full of interest as a wood, and prove that a knowledge of the habits of our fishes is not confined alone to a capacity for hooking them. We all know how an overhanging or adjacent tree or bush affords an insect banquet to a crowd of fishes in the stream. Mr. Bund gives a very practical example. "A stream comes down from the Welsh hills, which are open, bare, and uncultivated. A large larch plantation has been made. Above the plantation the Trout average seven to the pound; below they average five, and the difference in my opinion is entirely due to the quantity of food the plantation turns out into the river."

No one who wishes to successfully manage a fishery can afford to be without a precise knowledge of the habits and life-histories of fishes. This knowledge is seldom cultivated by angling preservationists. The writer of this notice, who in earlier days mixed much with anglers and pursued the craft, always found that he belonged to a brotherhood that knew how to catch, but was no match in real natural history of the subject with the village poacher, a worthy whose detested success is based on practical observation. Mr. Bund's book, besides detailing the secrets of Fishery Management, gives much information on a subject which is strikingly absent from 'The Zoologist' "Notes and Queries."

*Bird Life in an Arctic Spring.* The Diaries of DAN MEINERTZHAGEN and R. P. HORNBY. R. H. Porter.

THIS small but beautifully illustrated book is the *verbatim* diary of a three months' sojourn in the Arctic regions in 1897. It does not add much to the knowledge of scientific ornithology, but it will be read with pleasure by all lovers of birds. It is no small advantage to now and again meet with a naturalist who really loves his subject, and is not merely a describer of species, a critical nomenclator, or a resurrectionist in archaic technicalities. Dan Meinertzhagen was none of these things; his birds were evidently to him living realities, and subjects for a very considerable artistic capacity, as plates in this volume bear witness. One of the most original observations we have met in these pages does not refer to birds at all. "It is a curious fact that pine and fir trees, when they rot while standing, warp from right to left, and birch from left to right. This is almost invariably the case."

An Appendix on the "Mottisfont Birds" relates to one of the largest collections of living Eagles and raptorial birds in this country, formed by Meinertzhagen, and located at Mottisfont Abbey, on the Test, near Romsey, the residence of his father. This young ornithologist died last year, at the early age of twenty-three.



## EDITORIAL GLEANINGS.

It appears that a new fish may be added to our faunistic catalogues, if carefully sought. Mr. G. A. Boulenger, in this (September) number of the 'Annals and Magazine of Natural History,' gives the following particulars. "Last year in the Bay of Concarneau, and this year in the Gulf of St. Malo, my attention was attracted to a large Goby, growing to 10 inches, and most excellent eating, which appears to have been overlooked by all authors who have written on the fishes of the English Channel and the Bay of Biscay. This Goby I have ascertained to be *Gobius capito*, C. & V., a species believed to be restricted to the Mediterranean."

As it is highly probable that this species will be added to our British fauna, Mr. Boulenger has given the following diagnosis to assist our British ichthyologists:—"Habit particularly stout and heavy; depth of body 5 times in total length; length of head  $3\frac{2}{3}$  times. Head a little broader than deep; snout  $1\frac{1}{2}$  diameter of eye, which is  $5\frac{1}{2}$  times in length of head, and a little exceeds interorbital width; strongly enlarged outer teeth in the jaws; maxillary extending to below posterior third of eye; head scaly only on the occipital and upper opercular regions. The distance between the eye and the dorsal equals the distance between the end of the snout and the preopercle. Dorsal VI, 15, the two portions very narrowly separated; the longest soft rays  $\frac{1}{2}$  length of head, a little longer than the rays of the first fin, the base of which measures  $\frac{1}{2}$  its distance from end of snout. Anal with 12 rays. Pectoral  $\frac{3}{4}$  length of head, with silk-like upper rays. Ventral not reaching vent, with well-developed anterior flap forming an obtusely pointed process on each side. Caudal rounded. Caudal peduncle as long as deep. 61 scales in a longitudinal series, 22 between dorsal and anal. Greenish to blackish olive, more or less spotted and marbled with black; dorsal and caudal fins spotted with black; ventral whitish; yellowish white beneath. Total length 19 centimetres.

"Of the two British species with which this *Gobius* may have been confounded, *G. paganellus* and *G. niger* differ in the larger scales, there not being more than 17 between the dorsal and the anterior rays of the anal and 55 in a lateral series, and in the absence of the antero-lateral lobe of the ventral disk."

We trust that we may soon receive an account of the capture of *Gobius capito* along our southern coasts.

"OUR Obligations to Wild Animals" is the subject of a communication, by Sir Herbert Maxwell, to the August number of 'Blackwood's Magazine.' This article prompts much consideration, and is well worthy of the most careful perusal. Sir Herbert early starts with the postulate, "that animals, whatever we may feel to be our obligations towards them, have no rights, except such as human legislation has conferred upon them." All our anxiety for animal welfare is on this argument utilitarian. "It has been recognised that without song-birds this world would be a far less desirable place of abode; without insectivorous birds, a far less profitable place for farmers and gardeners; without birds of brilliant plumage or graceful form and flight, a much less interesting place to spend a holiday. Therefore the legislature has undertaken to protect Nightingales, as long as they do not forget their melody, and do not exchange a diet of caterpillars for one of wheat and strawberries; and Swallows, as long as they skim about in their own enchanting way, and confine their voracity to insect life." . . . "The doctrine of Aristotle that 'animals have no rights,' has been reaffirmed lately under authority of the Church of Rome, and applied in a manner which makes every humane heart burn with indignation. The Pope, if he is correctly interpreted, has lent his official sanction to the abominable maxim that it is contrary to the principles of true religion to legislate for the well-being of animals, and an infringement of the rights of Christians." The writer, however, though no anti-vivisectionist, is a good sportsman, a class we thoroughly believe is "hardly ever indifferent to the welfare and comfort of the animals which serve him"; and, again, the contention seems thoroughly sound, that, "to deal rightly and considerately with animals, wild and domestic, the emotions must have their due influence; the heart must be tender, but it must not rule the head."

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"On the Affinities of the Enterochromes" is the subject of a communication, by Marion J. Newbigin, in the 'Zoologischer Anzeiger' (No. 593). The authoress had previously suggested the name of Enterochrome for green pigments in Invertebrates, and had pointed out the difficulties in the way of the supposition that these pigments are identical with plant chlorophyll. Recently Dr. McNunn has also been re-investigating these pigments, and has come to the conclusion that they are derivatives of chlorophyll, and are produced by the action of the digestive ferments on the chlorophyll of the food. This prompted Miss Newbigin to renewed experiments, the results of which, taken in conjunction with the recent observations and conclusions of Dr. McNunn in the case of enterochlorophyll, and with the fact that that pigment occurs in the fæces of *Patella*, seem "to justify the conclusion that enterochlorophyll at least

is an acid derivative of chlorophyll, produced by the action of the digestive juices on the chlorophyll of the food." This may seem dry reading, but it is highly important to grasp some of these technical facts before launching one's boat on the pleasant waters of theoretical speculation on the problem of animal colouration.

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INVITATIONS have been sent to the leading ornithologists of this country to attend a meeting at Serajevo in Bosnia at the end of September. This reunion of bird-lovers will take place under the auspices of the Austro-Hungarian Government, and is promoted by Dr. Herman, of Budapest, and Dr. Lorenz, the Custos of the ornithological collections in the Vienna Museum. "The Hungarian Central Bureau," of which Dr. Herman is president, occupies itself greatly with the study of the migration of birds, and every year it publishes a detailed account of the observations from a small army of ornithologists, who record the migration in the various districts of the Austrian Empire. The excursions arranged in connection with the congress are likely to be full of interest. The Second International Ornithological Congress, which was held in Budapest in 1891, was perhaps the most successful gathering of naturalists that has yet taken place.

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At a meeting in Calcutta, of the Asiatic Society of Bengal, in June last, Mr. F. Finn exhibited a living soft-shelled Tortoise (*Emyda* sp.?), and read the following remarks by Mr. W. K. Dods:—

"I got the Turtle, exhibited, on the evening of April 1st, when out after Eld's Deer, on one of the grassy plains near the mouth of the Sittang River. Though dry and burnt up at the time of my visit, this ground is a swamp during at least seven months of the year, after which, when the water, even in the Buffalo-wallows, begins to disappear, the Turtles and Water-snakes bury themselves in the mud, and lie off, till the first monsoon rains soften the soil and release them for another season. This particular individual was under about two inches of soil, so dry and heated by the sun as to be most disagreeable to walk on even with the protection to one's feet afforded by a heavy pair of shooting-boots. Originally the ground had been covered by a thick growth of grass, but that had all been burnt off before by a jungle fire, exposing the cracked soil to the full rays of the sun, and the small round breathing hole to the sharp eyes of my Burman guide. It was quite lively when dug out, and has never to my knowledge eaten anything since. It seems equally indifferent whether its residence is in a bag, a basket, an empty cartridge-box, or a pail of water. I saw the shells of several others lying about, but whether they had met their end by jungle fires or other causes I could not find out."

In a recent issue of 'Ornis,' Count Ettore Arrigoni degli Oddi has published a Catalogue of his Collection of Italian Birds, which comprises many rare species. We are informed that the Count wishes his collection to be known to English ornithologists who may visit Italy from time to time.

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In the 'Proc. Linn. Soc. of New South Wales' (November, 1898), Mr. D. G. Stead has contributed some observations on the Crustacean genus *Neptunus*, founded upon specimens of *N. pelagicus*, "the principal edible Crab of the Sydney fish markets."

In this species the writer states "that up to a fairly large size, viewed *dorsally*, it is impossible to discriminate between males, females and sterile females. After this stage is passed, the chelipeds of the male become comparatively much larger, attaining considerable proportions. The sterile females do not become any larger, and, in comparative size of chelæ and a few other general characters, resemble the female, excepting that the female's body may reach as great a size as that of the largest male."

De Haan ('Fauna Japonica') figures several species which possess three types of pleon. He styles them—"Males, females, and 'spurious females.'"

Mr. Stead has only referred to the genus *Neptunus*, but he feels sure that others amongst Australian genera will be found to possess these sterile females. At present there are two species which he has good reason to believe agree in this manner with *Neptunus*, viz., *Ozius truncatus* and *Platyonychus bipustulatus*. "The former lives among loose stones in rocky situations, whilst the latter, though really pelagic, spends most of its time half-buried in the sand in shallow water."

